

directly on the insulator element. The interlayer is attached to the housing using a material bond and/or a friction-lock connection.

5 If, in an embodiment, the interlayer also extends into regions which lie outside the connection region, the interlayer can be attached better to the insulator, because the connection surface between the insulator and the interlayer is larger.

10 In a refinement, there is a gap between the housing and the interlayer in the region of the section lying closer to the base part. In the region of a section lying further away from the base part than this section, the interlayer is connected with the housing. In the section lying further away, the interlayer can also be connected with the insulator. However, in an alternative, there is a gap between interlayer and insulator in the section lying further away. In this refinement, a small peripheral ring of the interlayer is exposed in the gap between the insulator and housing. The ring-shaped section forms a kind of membrane which absorbs mechanical loads.

15 In refinements of the spark plug, the insulator element includes ceramic. The surface of the ceramic is treated in the region of the connection in such a way that the load capacity of the connection is enhanced. Roughening of the surface and/or applying a metallic topcoat are suitable methods.

Brief Description Of The Drawings

20 Figure 1A is a first illustration of a compact spark plug with a damping resistor made of a solidified glass melt.

25 Figure 1B is a second illustration of the compact spark plug shown in Figure 1A.

Figure 2A is a first illustration of a compact spark plug without a damping resistor.

30 Figure 2B is a second illustration of the compact spark plug shown in Figure 2A.

Figure 3A is a first illustration of a compact spark plug with a nondestructively replaceable damping resistor.

Figure 3B is a second illustration of the compact spark plug shown in Figure 3B.

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Detailed Description

Figure 1A shows a compact spark plug 10 in a partial section view. Spark plug 10 includes a cylindrical insulator 12 which tapers at its end toward an insulator base 14. Insulator 12 is penetrated along its longitudinal axis 16 by a through hole 18, whose diameter in the region of a central electrode 20 is somewhat smaller than along the rest of insulator 12. The half of insulator 12 containing insulator base 14 is almost completely surrounded by a housing 22. Viewed from insulator base 14 outward, housing 22 includes, in this sequence, a ground electrode 24, a threaded sleeve 26 having, for example, M14 external thread 28, a peripheral groove 30 for a sealing ring which provides a seal in the conical seal seat, a central part 32, and a double hex insertion nut 34. Housing 22 is screwed into an engine block of the vehicle and is connected with the ground electrode. Insulator 12, which is made of ceramic, insulates housing 22 and central electrode 20 as well as further elements for current conduction located in through hole 18.

In through hole 18 there are, in sequence from central electrode 20 to a terminal stud 36 screwed onto insulator 12 for connection of an ignition cable, an electrically conducting contact 38, a glass melt 40, which forms a damping resistor, an electrically conducting contact 42, and an electrode 44. Electrode 44 tapers toward insulator base 14 and forms a section 46 having a somewhat smaller diameter than the main part of electrode 44.

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Housing 22 is connected to insulator 10 by a welded connection 48. Welded connection 48 extends longitudinally up into threaded sleeve 26 from the end of housing 22 further from the base part. Welded connection 48 extends completely around the circumference lying transverse to the longitudinal direction. A gap between insertion nut 34 and insulator 12 is completely closed by welded connection 48. A gap formed between the end of threaded

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